

GDEST Site Visit Panel: Introduction, Overview, and Summary Findings

Africa faces a wide range of challenges in its efforts to develop vibrant and sustainable economies that ensure the well-being of its population. These include serious health, environmental, and governance issues that often reach critical levels. Often, these issues combine in complex manners and take place in a backdrop of low income, limited economic resources, and rapidly changing demographic trends.

Geospatial sciences provide valuable tools that develop insights to identify key issues, monitor trends, and analyze alternatives to achieve national and regional development goals. In order for the potential of geospatial science to be achieved, Africa will need to develop its human resource capacity to effectively use these tools, establish a robust spatial data infrastructure, develop effective means to access relevant data, and establish networks among professionals so that decision makers receive timely and relevant information—and realize the value of these information products in their everyday efforts.

Applications of geospatial science in Africa entered a new phase with the advent of the use of satellite imagery and geographic information systems, beginning in the early 1980's, but maintained a focus that was almost uniquely project-based. These projects collected, analyzed, and distributed products that addressed specific issues for specific audiences. This specific focus enabled scientists and practitioners to broaden the impact of projects, increase the analytical power leading to project implementation, and demonstrate the value of geospatial analysis (particularly GIS and remote sensing). However, because these projects were specific in focus and of a limited duration, much of the legacy data from these efforts has been lost.

A major change in this project-specific application occurred in the mid-1990s when the World Bank began a process of state of the environment reporting at a national level. In 1999, the World Bank reported that in the 1970s and 1980s, only one or two institutions in each sub-Saharan Africa countries were involved in the establishment of environmental information systems, the 1990s saw a tremendous growth in such efforts with over 500 EIS-related projects underway.

Another major watershed occurred in the lead-up to the World Summit on Sustainable Development in 2002. The U.S. Department of State, in collaboration with USAID and other agencies launched an initiative entitled Geospatial Information for Sustainable Development (GISD). This initiative selected a variety of case projects throughout Africa that demonstrated the use of geospatial analysis at the applied level. GISD also funded a study carried out by the National Science Foundation, which resulted in a report entitled "Down to Earth."

At the same time, the Global Earth Observation effort has moved to establish regional data structures, analytical programs and policy dialogues that have engaged national governments and institutions. The issues of spatial data infrastructure and data access have proven to be of particular value. This has been supplemented by a concentrated effort by the United Nations to do the same, as well as increasing institutional and human capacity at the technical level.

GDEST offers an excellent opportunity to contribute to the initiatives underway in Africa. The three GDEST themes offer a framework for such a contribution:

- (1) ***Observing Africa***, including examining trends and opportunities in monitoring the environment and sustainability issues;
- (2) ***Analysis of regional challenges to Africa***, how decisions and policies have been directly influenced by modeling, analysis, and visualization tools; and
- (3) ***The African data stream***, constraints and approaches for getting valid data in a timely and affordable manner in a useful format, and how it can be shared among collaborators.

As the GDEST effort progresses, a set of principles can act as a guide:

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- GDEST Site Visit Countries**
- Legend:
- Western Site Visits (Orange)
 - Eastern/Southern Site Visits (Pink)
- The map shows the following countries categorized by visit type:
- Western Site Visits (Orange):** Mauritania, Mali, Niger, Chad, Nigeria, Cameroon, DRC, Congo, Gabon, Equatorial Guinea, Liberia, Ivory Coast, Ghana, Senegal, Gambia, Guinea, Sierra Leone, and Liberia.
 - Eastern/Southern Site Visits (Pink):** Ethiopia, Sudan, South Sudan, Kenya, Tanzania, Uganda, Rwanda, Burundi, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Lesotho, and Swaziland.